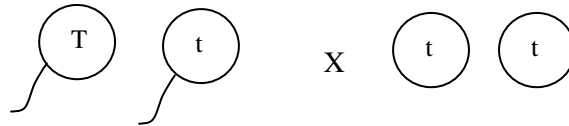


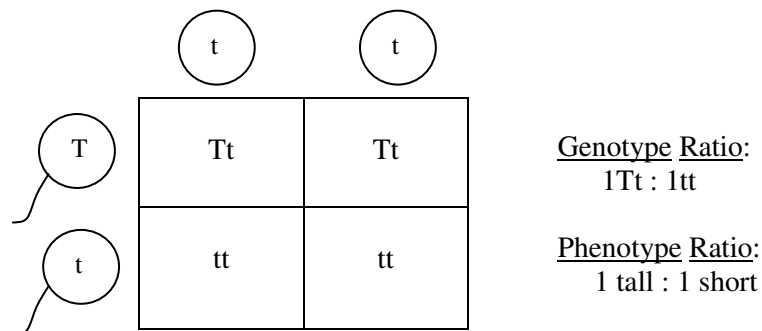
Name _____

One Factor Cross: Mendelian Pattern

1. Write the genotype of the parents of the cross using the correct symbols. EX: P₁ ♂ Tt X tt ♀
2. Segregate the genes (on chromosomes). This allows you to determine all the gene combinations possible in the egg and sperm cells.



3. Set up the Punnett square correctly. Determine the genotype and phenotype ratios.



Read each problem carefully. Set up the problem using the three labeled steps from above. Show all of your work, including a Punnett square.

1. In Mendel's crosses for plant height, tall (T) is dominant over short (t). Cross two heterozygous tall plants.

P₁ ♂ _____ X _____ ♀

GENOTYPE RATIO: _____

PHENOTYPE RATIO: _____

2. Another trait Mendel used was the color of pea pods. Green colored pods (N) are dominant over yellow pods (n). Cross a male plant that is heterozygous for green pods and a female plant with yellow pods.

P₁ ♂ _____ X _____ ♀

GENOTYPE RATIO: _____

PHENOTYPE RATIO: _____

3. In Mendel's crosses axial (A) flower position is dominant over terminal (a) flower position. Cross a male plant with terminal flowers and a female plant that is homozygous for axial flowers.

P₁ ♂ _____ X _____ ♀

GENOTYPE RATIO: _____

PHENOTYPE RATIO: _____

4. In guinea pigs black coat color (B) is dominant over brown (b) coat color. Cross two heterozygous black guinea pigs.

P₁ ♂ _____ X _____ ♀

GENOTYPE RATIO: _____

PHENOTYPE RATIO: _____

5. Curly hair (C) is dominant over straight hair (c). Cross a male that is homozygous for curly hair and a female that is heterozygous for curly hair.

P₁ ♂ _____ X _____ ♀

GENOTYPE RATIO: _____

PHENOTYPE RATIO: _____